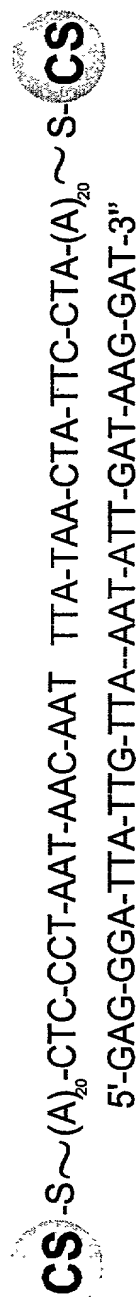
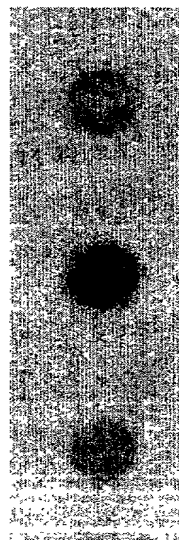


Fig. 1



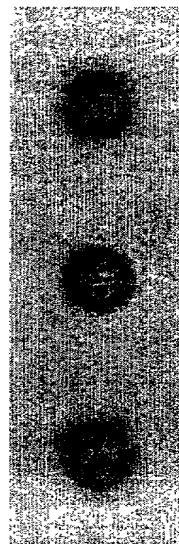
A

I II III



B

I II III



C

Fig. 2

# UV-Vis spectra of Pt and Pt/Au coreshell nanoparticles

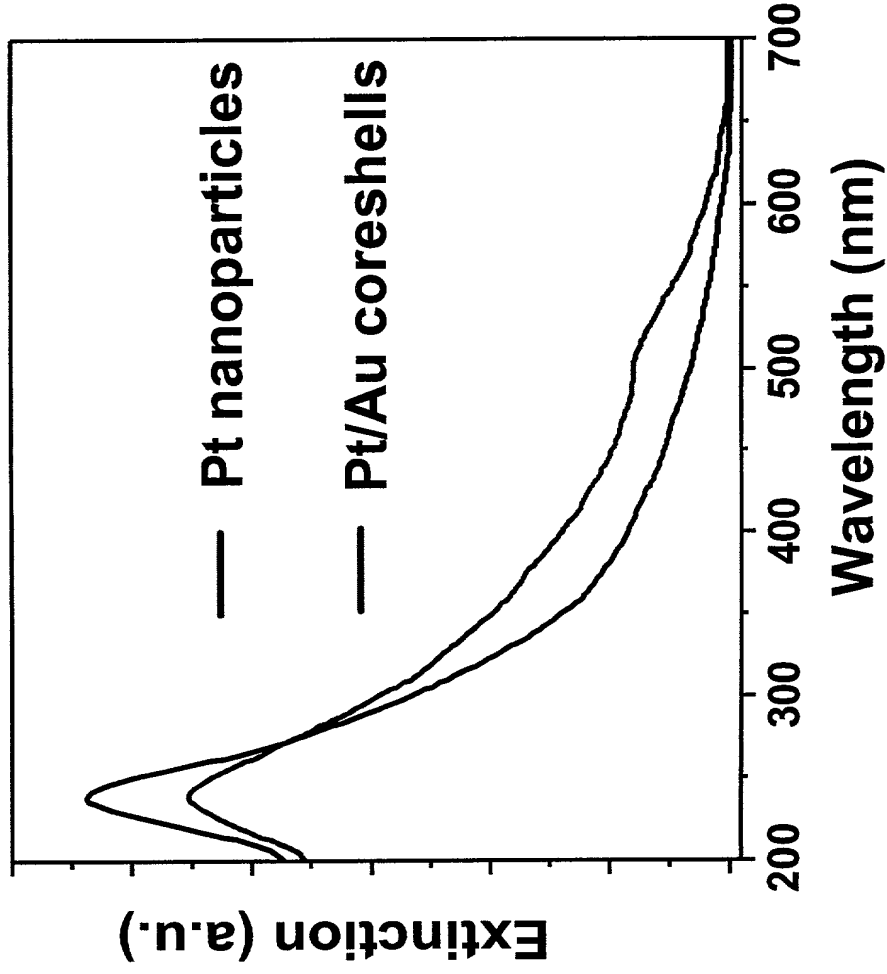


Fig. 3

# Growth of Au on the surface of Fe<sub>3</sub>O<sub>4</sub> nanoparticles

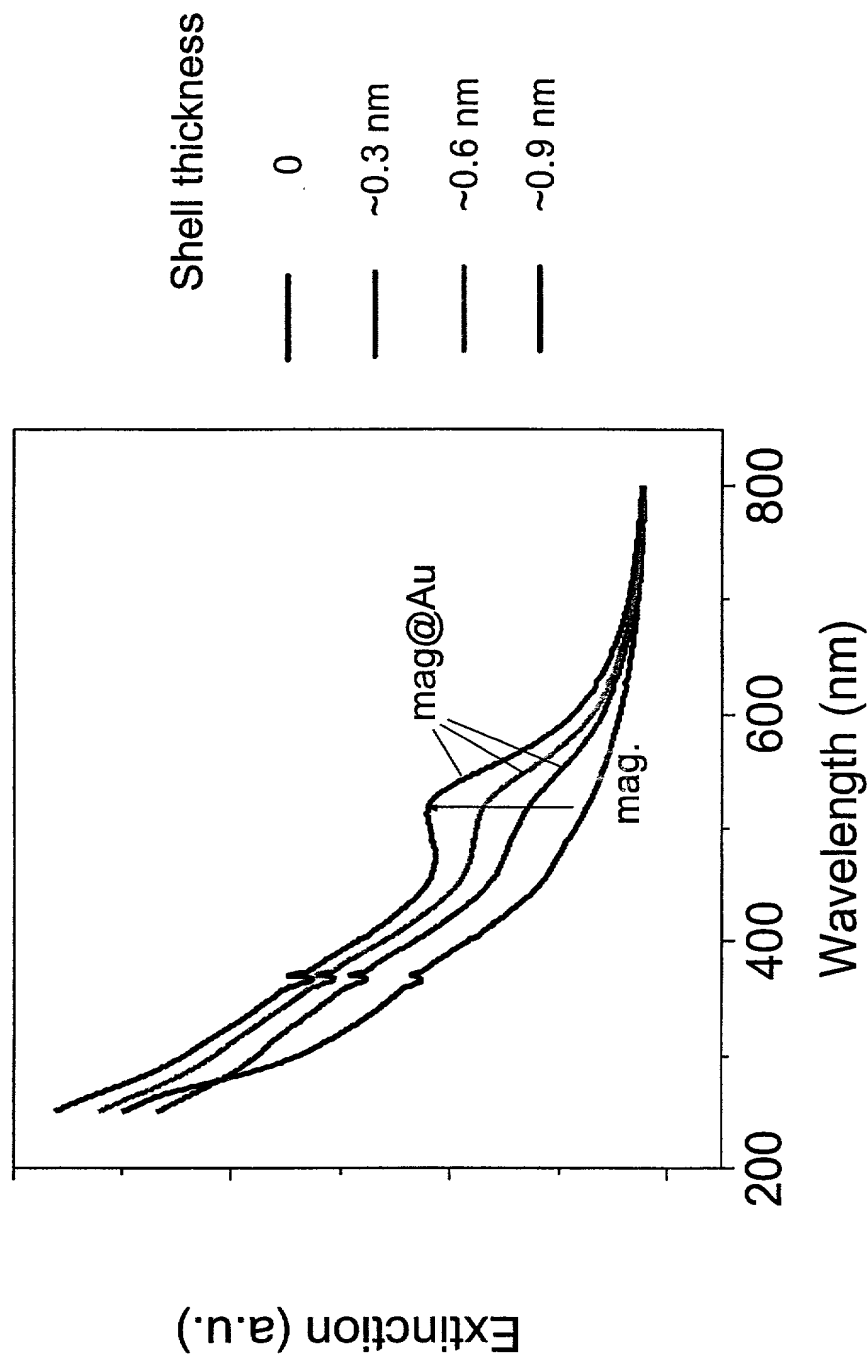
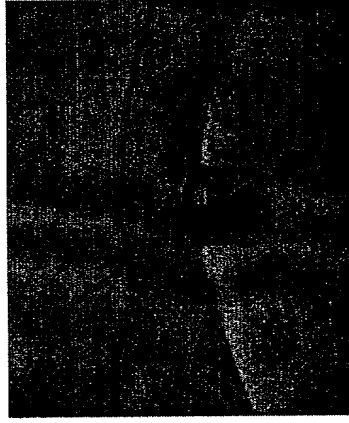
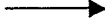


Fig. 4

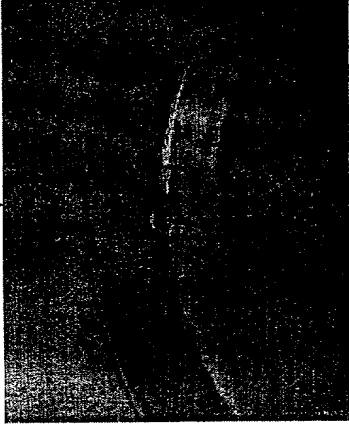
## Magnetic properties of gold coated $\text{Fe}_3\text{O}_4$ nanoparticles

magnet



Without a magnetic field

With the color of  
gold nanoparticles

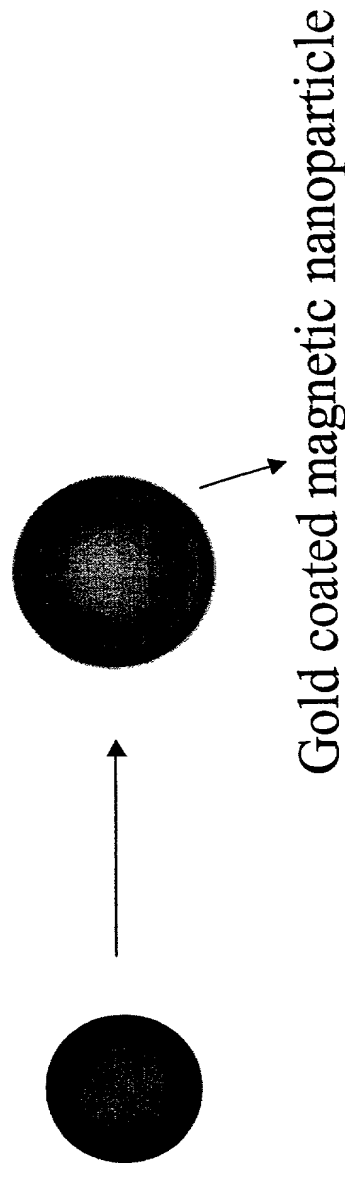


In a magnetic field for 12 hrs

Colorless

Fig. 5

## Core-shell Approach to Magnetic Gold Nanoparticles



A: metal oxides magnetic cores:  $\text{Fe}_3\text{O}_4$ ,  $\text{Co}_3\text{O}_4$

B: pure metal cores: Fe, Co, Ni...

C: alloy metal cores: FePt, FeAu

Fig. 6

Fig. 7

